

27 40 the pressure in the first passage is higher than the pressure in the second passage
58 5 by a predetermined amount.

REMARKS

The foregoing amendments and these remarks are in response to the final Office Action dated May 23, 2001. At the time of the Office Action, claims 1-16 were pending, claims 4-7 and 13-16 having been withdrawn from consideration by the Examiner. Claims 1-3 and 11-12 were rejected under 35 U.S.C. §102(b), and claims 8-10 were rejected under 35 U.S.C. §103(a).

Prior to turning to the rejections on art, a review of Applicants' invention is appropriate. One aspect of Applicants' invention relates to a switch valve which includes a single valve housing. The valve housing has a first passage to permit a fluid to flow into the valve housing, and second and third passages to permit, at selected times, the fluid in the first passage to exit the valve housing. A first valve mechanism is incorporated in the valve housing for selectively connecting and disconnecting the first passage with the second passage in accordance with an external instruction. A second valve mechanism is also incorporated in the valve housing for selectively connecting and disconnecting the first passage with the third passage in accordance with the difference between the pressure in the first passage and the pressure in the second passage when the first valve mechanism is closed. Notably, the second valve mechanism is always closed when the first valve mechanism is open.

Claim 1 has been amended to more particularly point out and distinctly claim the novel and nonobvious features of the present invention. In particular, claim 1 recites that the second valve mechanism is always closed when the first valve mechanism is open. In this regard, the first valve mechanism selectively connects and disconnects the first passage with the second passage in accordance with an external instruction. The second valve mechanism selectively connects and disconnects the first passage with the third passage in accordance with the difference between the pressure in the first passage and the pressure in the second

passage when the first valve mechanism is closed to disconnect the first passage from the second passage.

When the first valve mechanism is open, the first passage is connected to the second passage. In this state, the pressure in the first passage is substantially equal to the pressure in the second passage, such that, in the second valve mechanism, the pressure in the second valve chamber 59 is substantially equal to the pressure in the pressure chamber 81. Accordingly, the coil spring 88 holds the second valve body 84 against the second valve seat 61. Thus, the second valve mechanism remains closed and the first passage is disconnected from the third passage as long as the first valve mechanism is open.

When the first valve mechanism is closed, the first passage is disconnected from the second passage. In this state, as long as the pressure difference between the first passage and the second passage is smaller than a predetermined value, the second valve mechanism is closed, and the first passage is also disconnected from the third passage. When a certain time elapses and the pressure difference between the first passage and the second passage is larger than the predetermined value, the second valve mechanism is open, and the first passage is connected with the third passage. These features result in the advantages recited in the specification at page 15, line 34 to page 16, line 12.

Turning now to the rejections on art, claims 1-3 and 11-12 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,299,592 to Swanson. The Office Action also rejects claims 8-10 under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 4,270,726 to Hertfelder *et al.* in view of Swanson.

Applicants note that Swanson merely discloses an electrically operated valve that has a relief valve 70, which opens in response to excess pressure for relieving extremely high pressures to prevent the valve body from bursting. As asserted in the Office Action, the relief valve 70 relieves fluid pressure above the diaphragm 42, and fluid is communicated from the main flow path 20 through the choke

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passages 82/84, and thus the relief valve 70 will work whether the main valve is closed or open. Accordingly, both the main valve and the relief valve 70 can be open such that the passage 20 is connected with the passage 38 and the passage 76. Therefore, Swanson does not disclose a valve mechanism that corresponds to the second valve mechanism of the claimed invention. Accordingly, Swanson fails to disclose or suggest the features of claim 1 of the present application, and is believed to be allowable. Claims 2, 3, and 8-12 are also believed to be allowable because of their dependence on an allowable base claim, and because they recite features not taught or suggested by the prior art.

New independent claim 17 recites that when the first valve mechanism is closed, the second valve mechanism connects the first passage with the third passage if the pressure in the first passage is higher than the pressure in the second passage by a predetermined amount. These features of claim 17 are not disclosed or suggested in any of the cited references. Accordingly, claim 17 is believed to be allowable.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. Nevertheless, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. In view of the foregoing remarks, Applicants respectfully request reconsideration and prompt allowance of the pending claims.

Respectfully submitted,

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